

In the Claims

Please amend the claims by replacing all prior versions of the claims pursuant to 37 C.F.R. §1.121 as modified by 68 Fed. Reg. 38611 (June 30, 2003) as follows:

1-68. (Canceled)

<sup>1</sup>  
~~69.~~ (Currently Amended) An oligonucleotide which (1) is immobilized, (2) ~~comprises~~ consists of the sequence TACGGACGGAAACT (SEQ ID NO:3), (3) is linked to a fluorescent dye at its 5' terminus, and (4) is linked to a primary amine group at its 3' terminus.

<sup>2</sup>  
~~70.~~ (Currently Amended) An oligonucleotide which (1) is immobilized, (2) ~~comprises~~ consists of the sequence TACGGACGGAAACTGTTTTTTTTTTT (SEQ ID NO:4), (3) is linked to a fluorescent dye at its 5' terminus, and (4) is linked to a primary amine group at its 3' terminus.

<sup>3</sup>  
~~71.~~ (Previously Presented) The oligonucleotide of claim ~~69~~ <sup>1</sup> or ~~70~~ <sup>2</sup>, wherein the fluorescent dye is 6-(fluorescein-6-carboxamido) hexanoate.

<sup>4</sup>  
~~72.~~ (Previously Presented) The oligonucleotide of claim ~~69~~ <sup>1</sup> or ~~70~~ <sup>2</sup>, wherein the primary amine group is a C-7 amine.

<sup>5</sup>  
~~73.~~ (Previously Presented) The oligonucleotide of claim ~~69~~ <sup>1</sup> or ~~70~~ <sup>2</sup>, wherein the oligonucleotide is immobilized on a solid support.

- <sup>6</sup>  
~~74~~. (Previously Presented) The oligonucleotide of claim ~~73~~<sup>5</sup>, wherein the solid support is a glass bead.
- <sup>7</sup>  
~~75~~. (Currently Amended) An oligonucleotide which (1) is immobilized, (2) ~~comprises~~ consists of the sequence TACGGACAGAACT (SEQ ID NO:1), (3) is linked to a fluorescent dye at its 5' terminus, and (4) is linked to a primary amine group at its 3' terminus.
- <sup>8</sup>  
~~76~~. (Currently Amended) An oligonucleotide which (1) is immobilized; (2) ~~comprises~~ consists of the sequence TACGGACAGAACTGTTTTTTTTTTTTT (SEQ ID NO:5), (3) is linked to a fluorescent dye at its 5' terminus, and (4) is linked to a primary amine group at its 3' terminus.
- <sup>9</sup>  
~~77~~. (Previously Presented) The oligonucleotide of claim ~~75~~<sup>7</sup> or ~~76~~<sup>8</sup>, wherein the fluorescent dye is 6-(fluorescein-6-carboxamido) hexanoate.
- <sup>10</sup>  
~~78~~. (Previously Presented) The oligonucleotide of claim ~~75~~<sup>7</sup> or ~~76~~<sup>8</sup>, wherein the primary amine group is a C-7 amine.
- <sup>11</sup>  
~~79~~. (Previously Presented) The oligonucleotide of claim ~~75~~<sup>7</sup> or ~~76~~<sup>8</sup>, wherein the oligonucleotide is immobilized on a solid support.
- <sup>12</sup>  
~~80~~. (Previously Presented) The oligonucleotide of claim ~~79~~<sup>11</sup>, wherein the solid support is a glass bead.
- <sup>13</sup>  
~~81~~. (Previously Presented) An oligonucleotide which (1) has a

sequence which corresponds to a portion of a nucleic acid which encodes human hepatitis B virus surface antigen, wherein the sequence is AGGATCAACAACAACAGTA (SEQ ID NO:6), and (2) is linked at its 5' terminus to a biotin group.

<sup>14</sup>  
~~82~~. (Currently Amended) An oligonucleotide which (1) ~~has~~ consists of the sequence ATCGTCCTGGGCTTTCGCAA (SEQ ID NO:7), and (2) is linked at its 5' terminus to a fluorescent dye.

<sup>15</sup>  
~~83~~. (Previously Presented) The oligonucleotide of claim <sup>14</sup>~~82~~, wherein the fluorescent dye is Texas red.

<sup>16</sup>  
~~84~~. (Currently Amended) A composition which comprises a first oligonucleotide and a second oligonucleotide, wherein:  
(a) the first oligonucleotide (1) ~~has~~ consists of the sequence AGGATCAACAACAACAGTA (SEQ ID NO:6), and (2) is linked at its 5' terminus to a biotin group; and  
(b) the second oligonucleotide (1) ~~has~~ consists of the sequence ATCGTCCTGGGCTTTCGCAA (SEQ ID NO:7), and (2) is linked at its 5' terminus to a Texas red fluorescent dye.

<sup>17</sup>  
~~85~~. (Currently Amended) A method for identifying a human hepatitis B virus surface antigen mutant 145 in a sample which comprises:  
(A) obtaining a viral nucleic acid from the sample;  
(B) amplifying the viral nucleic acid in a polymerase chain reaction using two primers, wherein  
(1) one primer is a first oligonucleotide which (i) ~~has~~ consists of the sequence AGGATCAACAACAACAGTA (SEQ ID

NO:6), and (ii) is linked at its 5' terminus to a biotin group; and

(2) the other primer is a second oligonucleotide which (i) ~~has~~ consists of the sequence ATCGTCCTGGGCTTTCGCAA (SEQ ID NO:7), and (ii) is linked at its 5' terminus to a fluorescent dye;

(C) obtaining, from the amplified nucleic acid, single stranded nucleic acid which comprises the fluorescent dye; and

(D) contacting the single stranded nucleic acid which comprises the fluorescent dye to an immobilized third oligonucleotide, which oligonucleotide comprises a sequence which (i) corresponds to a portion of a human hepatitis B virus surface antigen nucleic acid, which portion comprises a mutation present at the amino acid at position 145 of human hepatitis B virus surface antigen, (ii) is linked to a fluorescent dye at its 5' terminus, and (iii) is linked to a primary amine group at its 3' terminus, under conditions permitting hybridization between the single stranded nucleic acid which comprises the fluorescent dye and the third oligonucleotide,

wherein hybridization between the single stranded nucleic acid which comprises the fluorescent dye and the immobilized third oligonucleotide identifies the sample as one containing a human hepatitis B virus surface antigen mutant 145.

86. (Canceled)

<sup>18</sup>  
~~87~~. (Previously Presented) The method of claim <sup>17</sup>~~86~~, wherein

the third oligonucleotide comprises the sequence  
TACGGACAGAACT (SEQ ID NO:1).

<sup>19</sup>  
~~88~~. (Previously Presented) The method of claim ~~85~~<sup>17</sup>, wherein  
the third oligonucleotide comprises the sequence  
TACGGACAGAACTGTTTTTTTTTTTTT (SEQ ID NO:5).

<sup>20</sup>  
~~89~~. (Previously Presented) The method of claim ~~85~~<sup>17</sup>, wherein  
the fluorescent dye which is linked to the third  
oligonucleotide is 6-(fluorescein-6-carboxamido)  
hexanoate.

<sup>21</sup>  
~~90~~. (Previously Presented) The method of claim ~~85~~<sup>17</sup>, wherein  
the primary amine group which is linked to the third  
oligonucleotide is a C-7 amine.

<sup>22</sup>  
~~91~~. (Previously Presented) The method of claim ~~85~~<sup>17</sup>, wherein  
the third oligonucleotide is immobilized on a solid  
support.

<sup>23</sup>  
~~92~~. (Previously Presented) The method of claim ~~91~~<sup>22</sup>, wherein  
the solid support is a glass bead.

<sup>24</sup>  
~~93~~. (Previously Presented) The method of claim ~~85~~<sup>17</sup>, wherein  
the third oligonucleotide (1) is immobilized; (2)  
comprises the sequence TACGGACAGAACTGTTTTTTTTTTTTT (SEQ  
ID NO:5), (3) is linked to 6-(fluorescein-6-carboxamido)  
hexanoate at its 5' terminus, and (4) is linked to a C-7  
amine at its 3' terminus.

<sup>25</sup>  
~~94~~. (Previously Presented) The method of claim ~~85~~<sup>17</sup>, wherein

the fluorescent dye which is linked to the primer in step  
(B) (2) is Texas red.

<sup>26</sup>  
~~95.~~ (Previously Presented) The method of claim <sup>25</sup>~~85~~, wherein  
the sample is a serum sample.

<sup>27</sup>  
~~96.~~ (Currently Amended) A method for identifying a wildtype  
human hepatitis B virus surface antigen in a sample  
which comprises:

- (A) obtaining a viral nucleic acid from the sample;
- (B) amplifying the viral nucleic acid in a polymerase  
chain reaction using two primers, wherein
  - (1) one primer is a first oligonucleotide which (i)  
~~has~~ consists of the sequence AGGATCAACAACAACAGTA  
(SEQ ID NO:6), and (ii) is linked at its 5' terminus  
to a biotin group; and
  - (2) the other primer is a second oligonucleotide  
which (1) ~~has~~ consists of the sequence  
ATCGTCCTGGGCTTTCGCAA (SEQ ID NO:7), and (2) is  
linked at its 5' terminus to a fluorescent dye;
- (C) obtaining, from the amplified nucleic acid, single  
stranded nucleic acid which comprises the  
fluorescent dye; and
- (D) contacting the single stranded nucleic acid which  
comprises the fluorescent dye to an immobilized  
third oligonucleotide, which oligonucleotide  
comprises a sequence which (1) corresponds to a  
portion of a wildtype human hepatitis B virus  
surface antigen nucleic acid, (2) is linked to a  
fluorescent dye at its 5' terminus; and (3) is  
linked to a primary amine group at its 3' terminus,

under conditions permitting hybridization between the single stranded nucleic acid which comprises the fluorescent dye and the third oligonucleotide, wherein hybridization between the single stranded nucleic acid which comprises the fluorescent dye and the third oligonucleotide identifies the sample as one containing a wildtype human hepatitis B virus surface antigen.

~~28~~  
~~97~~. (Previously Presented) The method of claim ~~96~~<sup>27</sup>, wherein the third oligonucleotide comprises the sequence TACGGACGGAAACT (SEQ ID NO:3).

~~29~~  
~~98~~. (Previously Presented) The method of claim ~~96~~<sup>27</sup>, wherein the third oligonucleotide comprises the sequence TACGGACGGAAACTGTTTTTTTTTTT (SEQ ID NO:4).

~~30~~  
~~99~~. (Previously Presented) The method of claim ~~96~~<sup>27</sup>, wherein the fluorescent dye which is linked to the third oligonucleotide is 6-(fluorescein-6-carboxamido) hexanoate.

~~31~~  
~~100~~. (Previously Presented) The method of claim ~~96~~<sup>27</sup>, wherein the primary amine group which is linked to the third oligonucleotide is a C-7 amine.

~~32~~  
~~101~~. (Previously Presented) The method of claim ~~96~~<sup>27</sup>, wherein the third oligonucleotide is immobilized on a solid support.

~~33~~  
~~102~~. (Previously Presented) The method of claim ~~101~~<sup>32</sup>, wherein

the solid support is a glass bead.

<sup>34</sup>  
~~103.~~ (Previously Presented) The method of claim ~~96~~<sup>27</sup>, wherein the third oligonucleotide (1) is immobilized; (2) comprises the sequence TACGGACGGAAACTGTTTTTTTTTTT (SEQ ID NO:4); (3) is linked to 6-(fluorescein-6-carboxamido) hexanoate at its 5' terminus, and (4) is linked to a C-7 amine at its 3' terminus.

<sup>35</sup>  
~~104.~~ (Previously Presented) The method of claim ~~96~~<sup>27</sup>, wherein the fluorescent dye which is linked to the primer in step (B) (2) is Texas red.

<sup>36</sup>  
~~105.~~ (Previously Presented) The method of claim ~~96~~<sup>27</sup>, wherein the sample is a serum sample.